

ELECTRICAL SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE USED IN DRAWINGS AND MAY NOT APPLY TO CURRENT PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED ON DRAWINGS.

GENERAL ELECTRICAL ABBREVIATIONS

1P - ONE POLE	KVA - KILOVOLT AMPERE
2P - TWO POLE	KVAR - KILOVOLT AMPERE REACTIVE
3P - THREE POLE	KW - KILOWATT
4P - FOUR POLE	LP - LIGHTING PANEL
1P, 1W- ONE POLE, ONE WIRE	LS - LIMIT SWITCH
1P, 2W- ONE POLE, TWO WIRE	LTG - LIGHTING
2P, 2W- TWO POLE, TWO WIRE	LV - LOW VOLTAGE
2P, 3W- TWO POLE, THREE WIRE	MC - MECHANICAL CONTRACTOR
3P, 2W- THREE POLE, TWO WIRE	MCA - MINIMUM CIRCUIT AMPS
3P, 3W- THREE POLE, THREE WIRE	MCC - MOTOR CONTROL CENTER
3P, 4W- THREE POLE, FOUR WIRE	MDP - MAIN DISTRIBUTION PANEL
4P, 4W- FOUR POLE, FOUR WIRE	MFR - MANUFACTURER
A - AMPERE	MG - MAIN GROUND BAR
AC - ALTERNATING CURRENT	MH - MANHOLE
AF - AMPERE FRAME	MISC - MISCELLANEOUS
AFG - ABOVE FINISHED FLOOR	MLO - MAIN LUGS ONLY
AFG - ABOVE FINISHED GRADE	MTD - MOUNTED
AIC - AMPERE INTERRUPTING CAPACITY	MTG - MOUNTING
AL - ALUMINUM	MTS - MANUAL TRANSFER SWITCH
ARCH- ARCHITECT	MV - MEDIUM VOLTAGE
AS - AMP SWITCH	N / A - NOT APPLICABLE
AT - AMP TRIP	NC - NORMALLY CLOSED
ATS - AUTOMATIC TRANSFER SWITCH	NEC - NATIONAL ELECTRIC CODE
A / V - AUDIO VISUAL	NIC - NOT IN CONTRACT
AVE - AVERAGE	NO - NORMALLY OPEN
B - PEDestal MOUNTED ON BENCH TOP	NR - NEAR UNIT
BF - BELOW FLOOR	NTS - NOT TO SCALE
BFF - BELOW FINISHED FLOOR	# - NUMBER
BFG - BELOW FINISHED GRADE	OU - OUTSIDE UNIT
BLDG - BUILDING	P - POLE
C - CONDUIT	PB - PULL BOX
CATV - CABLE TELEVISION	PC - PLUMBING SYSTEM CONTRACTOR
CB - CIRCUIT BREAKER	PH - PHASE
CKT - CIRCUIT	PL - PILOT LIGHT
CL - CENTERLINE	PL - PANEL OR PANELBOARD
CLG - CEILING MOUNTED	PP - POWER PANEL
CT - CURRENT TRANSFORMER	PR - PAIR
CU - COPPER	PRI - PRIMARY
D - DEDICATED DEVICE	PVC - POLYVINYL CHLORIDE
DC - DIRECT CURRENT	REC - RECESSED
Δ - DELTA	RSC - RIGID STEEL CONDUIT
DISC - DISCONNECT	SC - SECURITY CONTRACTOR
DWG - DRAWING	SEC - SECONDARY
EC - ELECTRICAL CONTRACTOR	SN - SOLID NEUTRAL
EM - EMERGENCY	SP - SPARE
EMT - ELECTRIC METALLIC TUBING	SS - STAINLESS STEEL
ER - EXISTING TO BE REMOVED	ST - SHUNT TRIP
ERL - EXISTING TO BE RELOCATED	STP - SHIELDED TWISTED PAIR
ETR - EXISTING TO REMAIN	SUSP - SUSPENDED
EX - EXISTING	SW - SWITCH
FA - FIRE ALARM	SWBD - SWITCHBOARD
FD - FUSIBLE DISCONNECT	TGB - TELECOMMUNICATION GROUND BAR
FLA - FULL LOAD AMPS	TC - TELEPHONE CABINET
FO - FIBER OPTIC	TCI - TELECOMMUNICATIONS CABLING INSTALLER
FPC - FIRE PROTECTION CONTRACTOR	TEL - TELEPHONE
GC - GENERAL CONTRACTOR	TELECOM - TELECOMMUNICATIONS
GFCI - GROUND FAULT CIRCUIT INTERRUPTER	TELE / DATA - TELEPHONE / DATA
G - GROUND FAULT PROTECTED	TP - TWISTED PAIR
GND - GROUND	TYP - TYPICAL
GRC - GALVANIZED RIGID CONDUIT	UG - UNDERGROUND
HH - HANDHOLE	UOI - UNLESS OTHERWISE INDICATED
HP - HORSEPOWER	UTP - UNSHIELDED TWISTED PAIR
HOA - HANDS-OFF-AUTO	V - VOLT
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING	W - WATT
HZ - HERTZ (CYCLE) PER SECOND	WP - WATERPROOF
IN - INSIDE UNIT	WR - WEATHER RESISTANT
JB - JUNCTION BOX	XFMR - TRANSFORMER
	Y - WYE

LUMINAIRES

GENERAL LIGHTING

- 1X1 FIXTURES
- 1X2 FIXTURES
- 1X3 FIXTURES
- 1X4 FIXTURES
- 2X2 FIXTURES
- 2X4 FIXTURES

UNDER CABINET

INDUSTRIAL STRIP

TRACK LIGHTING

- DOWNLIGHT
- ACCENT LIGHT
- FLOOD LIGHT
- 2 LAMP FLOOD LIGHT

POLE MOUNTED

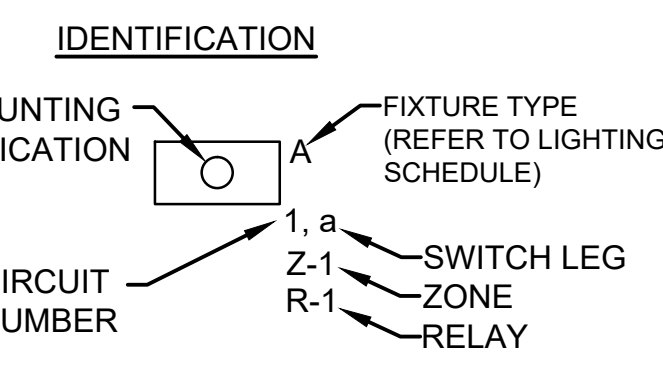
WALL MOUNTED

MOUNTING SYMBOLS

- RECESSED MOUNTED
- SURFACE MOUNTED
- PENDANT MOUNTED
- WALL MOUNTED

EMERGENCY POWER INDICATION

- NORMAL POWER
- HALF EMERGENCY POWER
- EMERGENCY POWER



EGRESS LIGHTING

- SINGLE REMOTE HEAD
- DOUBLE REMOTE HEAD
- BATTERY UNIT
- BATTERY UNIT WITH HEADS

EXIT SIGNS (HATCH INDICATES FACE)

- SINGLE FACE EXIT SIGN
- DOUBLE FACE EXIT SIGN
- SINGLE FACE EXIT SIGN WITH HEADS
- DOUBLE FACE EXIT SIGN WITH HEADS

LIGHTING CONTROLS

- WALL MOUNTED SWITCH/SENSOR
- OCCUPANCY SENSOR

ABBREVIATIONS

- 3 - 3 WAY SWITCH
- 4 - 4 WAY SWITCH
- a - SWITCH LEG
- D - DIMMER SWITCH
- K - KEYSWITCH
- L - LOW VOLTAGE SWITCH
- M - MOTOR RATED SWITCH
- O - OCCUPANCY SENSOR
- P - PILOT LIGHT SWITCH
- T - TIMER SWITCH
- V - VACANCY SENSOR

DRAWING SYMBOLS

- KEYNOTE
- REVISION TAG

LINE TYPES

- NEW WORK

FIRE ALARM SYMBOLS

- ADDRESSABLE CONTROL MODULE
- ADDRESSABLE MONITOR MODULE
- SPRINKLER FLOW SWITCH (PROVIDE ADDRESSABLE MODULE)
- SPRINKLER TAMPER SWITCH (PROVIDE ADDRESSABLE MODULE)
- SMOKE DAMPER
- MAGNETIC DOOR HOLDER (SEN) SENTRONIC
- PRESSURE SWITCH
- FAN SHUTDOWN (OTHER) (RELAY)
- FIRE SUPPRESSION CONTROL PANEL
- FIRE SUPPRESSION CONTROL PANEL
- PHOTOELECTRIC DUCT SMOKE DETECTOR WITH SAMPLING TUBE
- FIRE ALARM MANUAL PULL STATION - MOUNT 48" AFF TO TOP OF BOX (M) MULLION MOUNTED
- FIRE ALARM STROBE - MOUNT 80" TO BOTTOM OF BOX OR 6" DOWN FROM CEILING TO TOP OF BOX WHICHEVER IS LOWER. (xxcd) = CANDELA RATING
- HORN - MOUNT 80" AFF TO BOTTOM OF BOX OR 6" DOWN FROM CEILING TO TOP OF BOX WHICHEVER IS LOWER. (xxcd) = CANDELA RATING
- HORN/STROBE - MOUNT 80" AFF TO BOTTOM OF BOX OR 6" BELOW DOWN FROM CEILING TO TOP OF BOX WHICHEVER IS LOWER. (xxcd) = CANDELA RATING
- PHOTO ELECTRIC SMOKE DETECTOR
- HEAT DETECTOR - 135°F FIXED AND RATE OF RISE (150°F) (20°F) UNLESS NOTED ON THE PLANS.
- FIRE ALARM ANNUNCIATOR PANEL
- FIRE ALARM CONTROL PANEL

POWER

- FLUSH MOUNTED PANEL BOARD
- EQUIPMENT CONNECTION
- NON-FUSED SWITCH

RECEPTACLES

- DUPLEX RECEPTACLE
- GFCI DUPLEX RECEPTACLE
- CEILING MOUNTED CORD REEL
- DEAD FRONT GFCI (LEGRAND 2087LA)

ABBREVIATIONS

- AFCI - ARC-FAULT CIRCUIT INTERRUPTER
- a - SWITCH LEG
- C - ABOVE COUNTER
- CO - COPIER
- DR - DRYER
- DW - DISHWASHER
- WP - WEATHER PROOF IN-USE
- WR - WEATHER RESISTANT DEVICE
- G - GROUND FAULT CIRCUIT INTERRUPTER

RECEPTACLE NOTE:
FOR ALL OUTLETS, OTHER THAN ABOVE COUNTER, GROUND PLUG SHALL BE IN DOWNWARD POSITION. PROVIDE TAMPER PROOF RESISTANCE RECEPTACLES IN PUBLIC AREAS INCLUDING EXAM ROOMS, CORRIDOR, RESTROOMS, AND LOBBY.

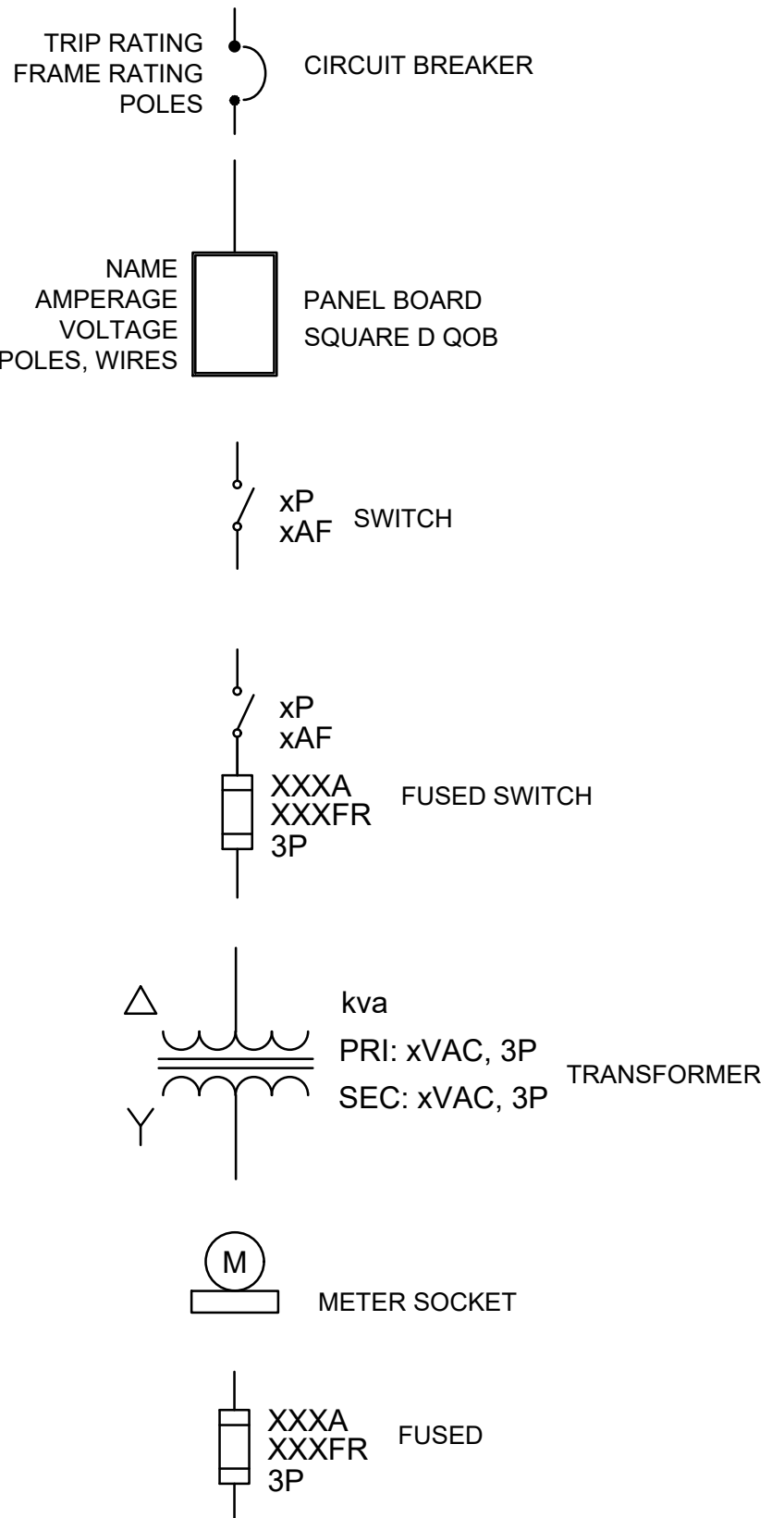
DATA/COMM

- DATA OUTLET FLOOR MOUNTED
- DATA OUTLET WALL MOUNTED
- DATA VOICE FLOOR MOUNTED
- DATA VOICE WALL MOUNTED
- VOICE OUTLET WALL MOUNTED
- WIRELESS ACCESS POINT

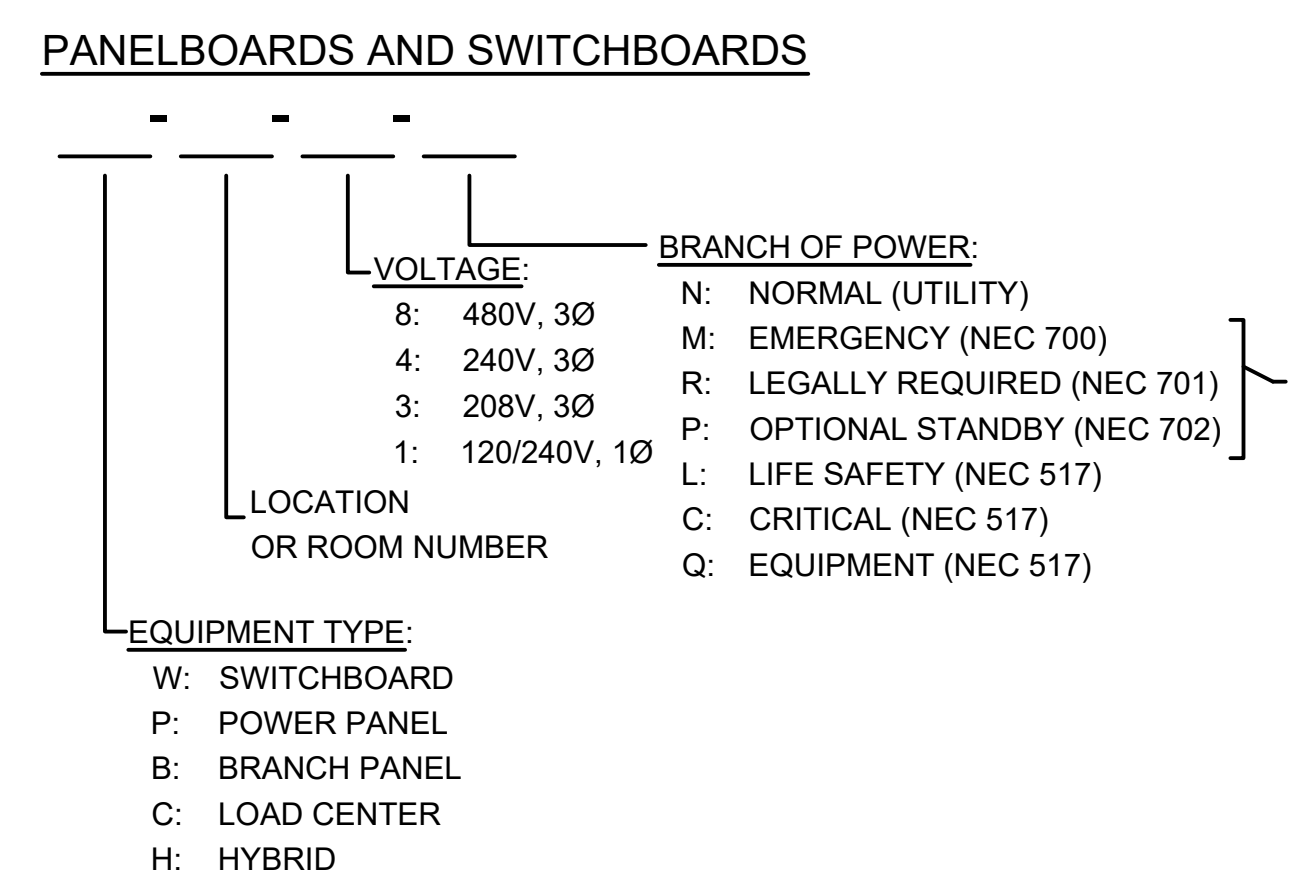
CONTROLS

- EMERGENCY POWER OFF BUTTON
- OVERHEAD DOOR CONTROL
- PUSH BUTTON - MOUNT 48" TO TOP OF BOX - (M) MULLION MOUNTED

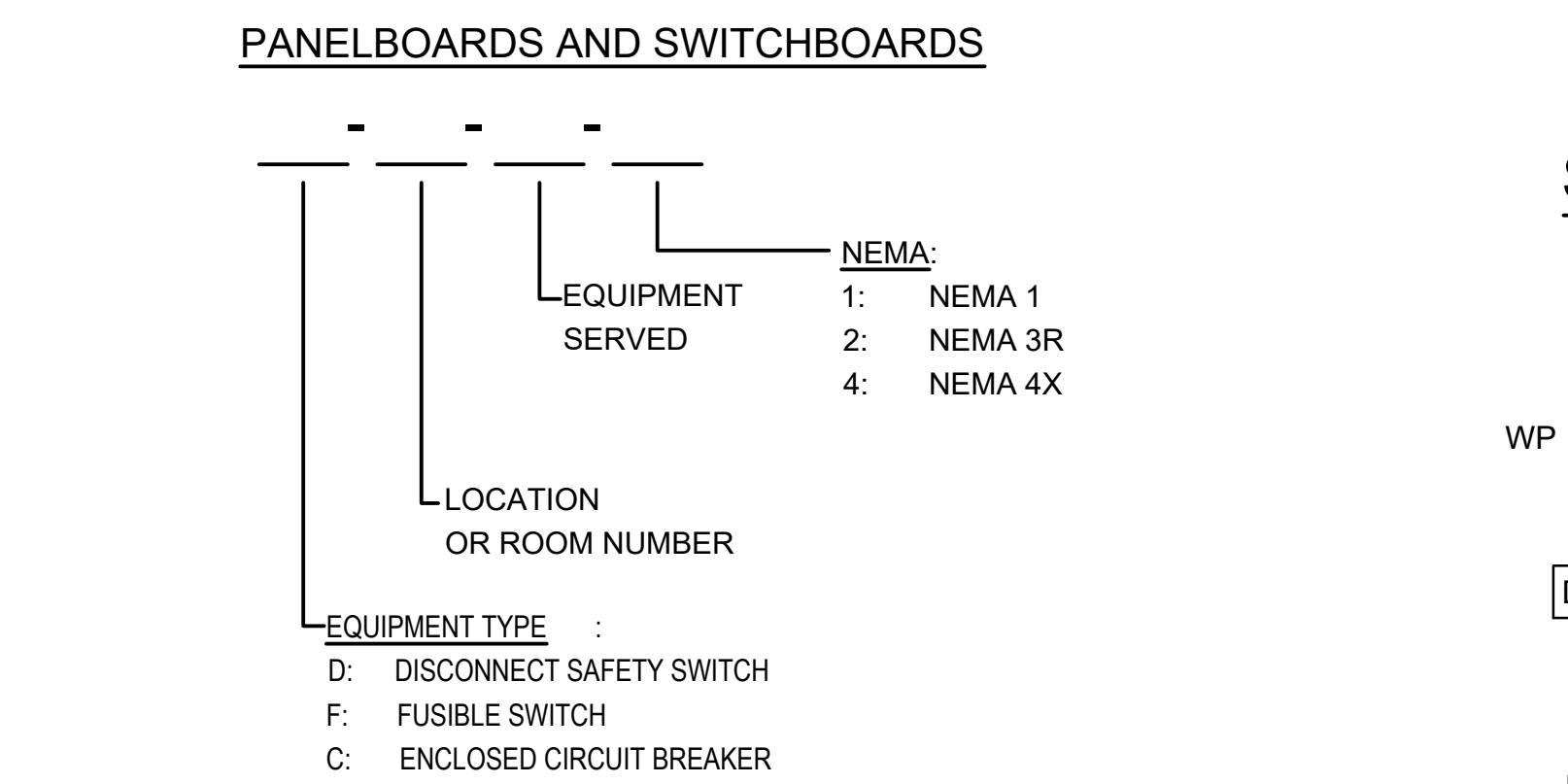
ONE-LINE



EQUIPMENT DESIGNATION LEGENDS



ENCLOSED SWITCHES DESIGNATION LEGENDS



SECURITY AND DOOR HARDWARE

- KEY PAD
- CARD READER - PROVIDE OUTLET BOX ROUGH-IN AT 48" AFF/AFG. HEIGHT MEASURED FROM FLOOR/GRADE TO TOP OF BOX, WITH SINGLE GANG PLASTER RING. PROVIDE CONCEALED 3/4" CONDUIT RACEWAY UP TO A SINGLE GANG BOX ABOVE THE DOOR. PROVIDE WIRING BACK TO CARD ACCESS SYSTEM CONTROL PANEL.
- DOOR POSITION SWITCH BY SECTION 08 71 00. WIRED BY ELECTRICAL CONTRACTOR, CONNECT TO 12V. DC OR 24V. DC POWER.
- ELECTRIC STRIKE BY SECTION 08 71 00. WIRED BY ELECTRICAL CONTRACTOR. CONNECT TO 12V. DC OR 24V. DC POWER.
- POWER SUPPLY SECTION 08 71 00. WIRED BY ELECTRICAL CONTRACTOR. INPUT: 120V., OUTPUT: 24V. DC. PROVIDE 120V. POWER FROM LOCAL CONSTANT CIRCUIT. POWER SUPPLY POWERS THE ELECTRIC LATCH RETRACTION DEVICES(S).
- DOOR RELEASE BUTTON
- DURESS BUTTON
- SECURITY ALARM CONTROL PANEL
- SECURITY CAMERA (BY OTHERS)

ELECTRICAL SHEET INDEX	
E-001	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E-101	SITE LIGHTING PLAN
E-201	SITE PHOTOMETRICS PLAN
E-301	LIGHTING FIXTURES, LIGHTING SCHEDULE, AND DETAILS
E-401	FIRST FLOOR LIGHTING PLAN
E-501	FIRST FLOOR POWER AND SYSTEMS PLAN
E-601	FIRST FLOOR SECURITY PLAN
E-701	ELECTRICAL EQUIPMENT SCHEDULES
E-702	ELECTRICAL PANELBOARD SCHEDULES
E-703	ELECTRICAL ONE LINE DIAGRAM

CITY OF WAUKESHA PLAN COMMISSION REVIEW
SCOPE DOCUMENTS

Revisions
Drawing Date: 06/07/2019

FROEDTERT SUNSET DRIVE CLINIC

Project No. FROEDTERT HEALTH
218082.00

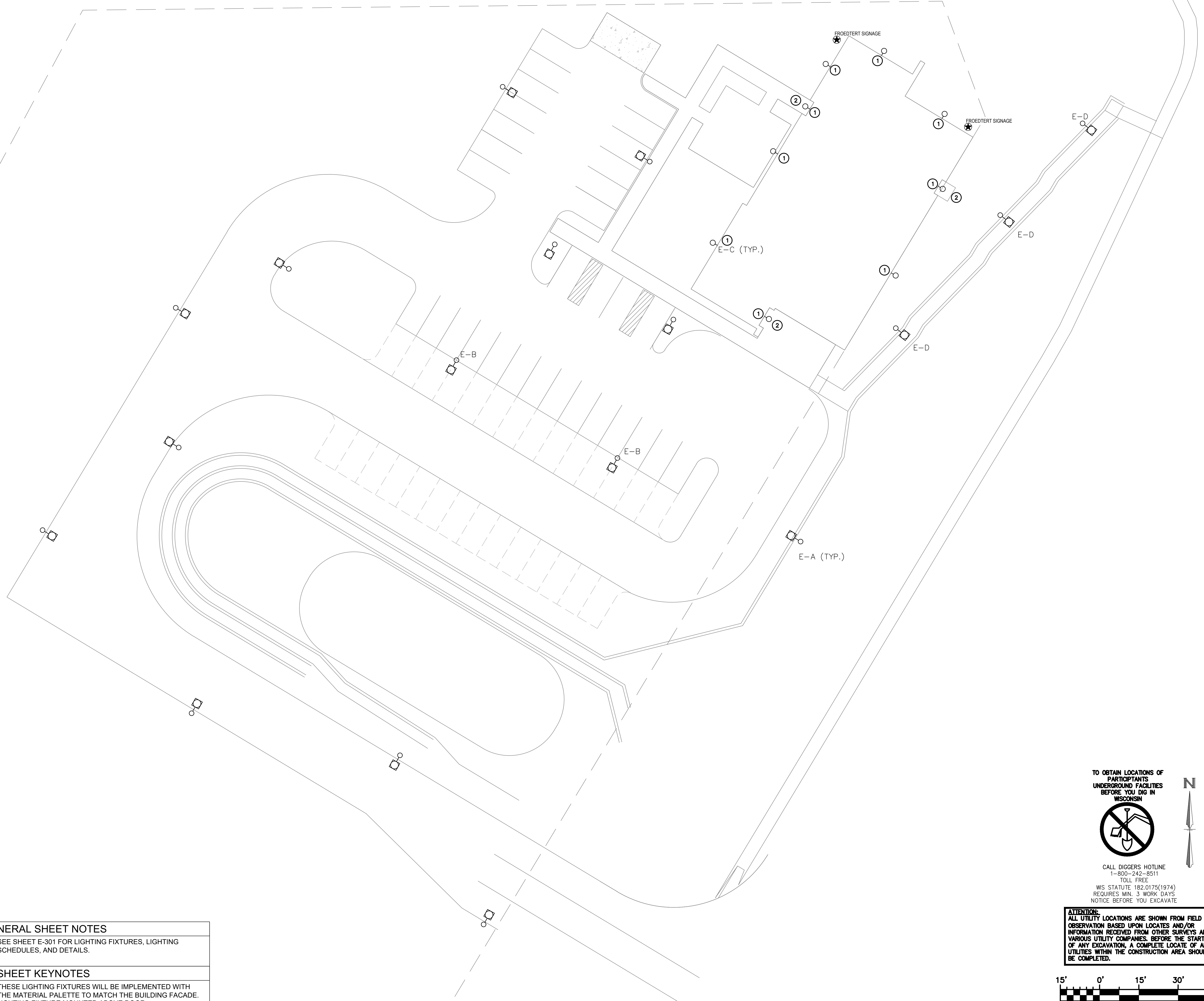
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ELECTRICAL SYMBOLS AND ABBREVIATIONS

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Sheet No.
E-001

NOT FOR
CONSTRUCTION



GENERAL SHEET NOTES	
1.	SEE SHEET E-301 FOR LIGHTING FIXTURES, LIGHTING SCHEDULES, AND DETAILS.
SHEET KEYNOTES	
1	THESE LIGHTING FIXTURES WILL BE IMPLEMENTED WITH THE MATERIAL PALETTE TO MATCH THE BUILDING FACADE.
2	LIGHTING FIXTURE MOUNTED ABOVE DOOR.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN



CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE
WIS STATUTE 182.0175(1974)
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NOTICE BEFORE YOU EXCAVATE.

ATTENTION:
ALL UTILITY LOCATIONS ARE SHOWN FROM FIELD OBSERVATION BASED UPON LOCATES AND/OR INFORMATION RECEIVED FROM OTHER SURVEYS AND VARIOUS UTILITY COMPANIES. BEFORE THE START OF ANY EXCAVATION, A COMPLETE LOCATE OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA SHOULD BE COMPLETED.




Revisions

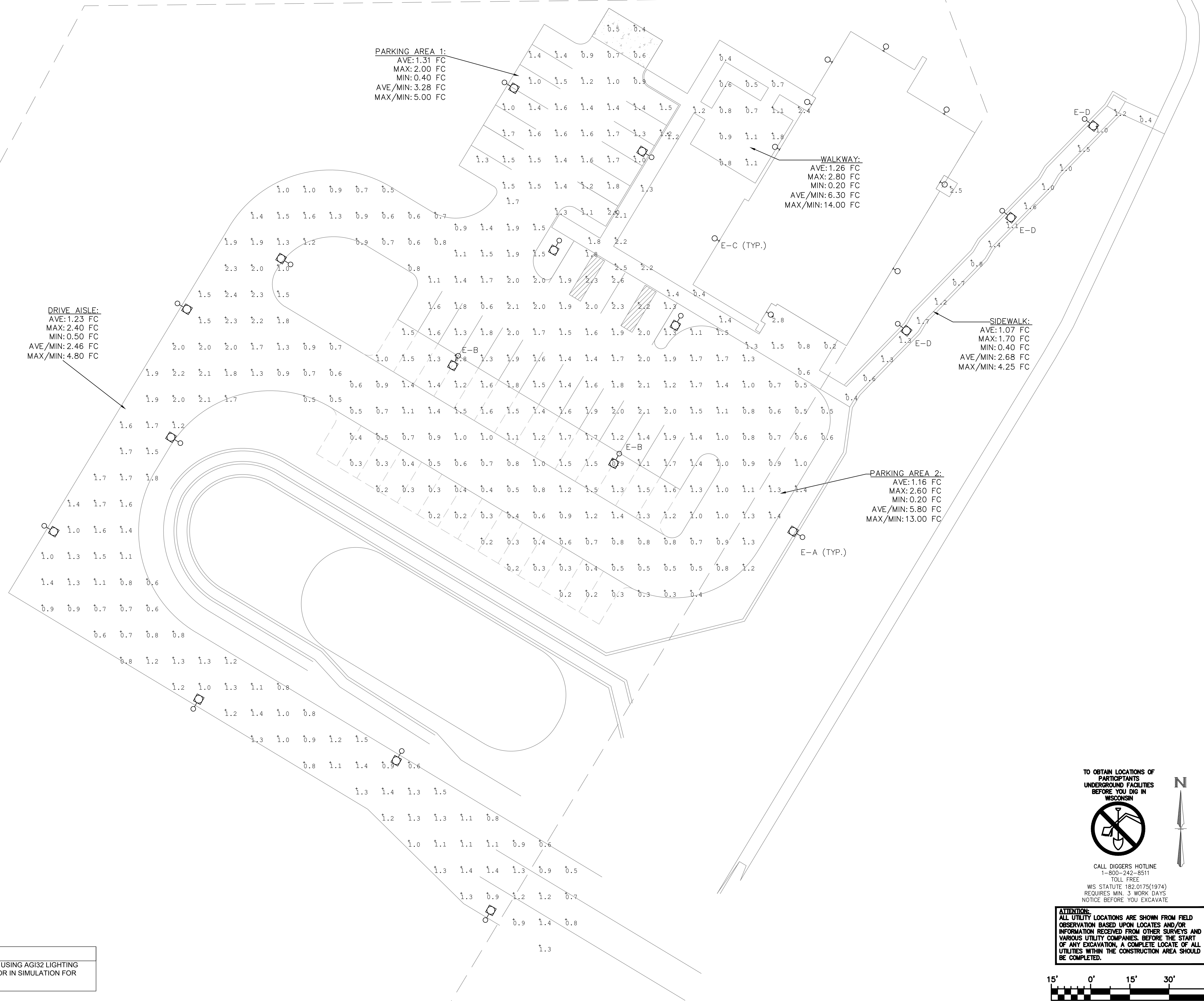
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FROEDTERT SUNSET
DRIVE CLINIC

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Sheet Title
SITE LIGHTING PLAN

NOT FOR CONSTRUCTION



GENERAL SHEET NOTES
 1. ALL LIGHTING SIMULATIONS DONE USING AGI32 LIGHTING SOFTWARE. LIGHTING LOSS FACTOR IN SIMULATION FOR LED LUMINAIRES WAS 0.92.

Revisions

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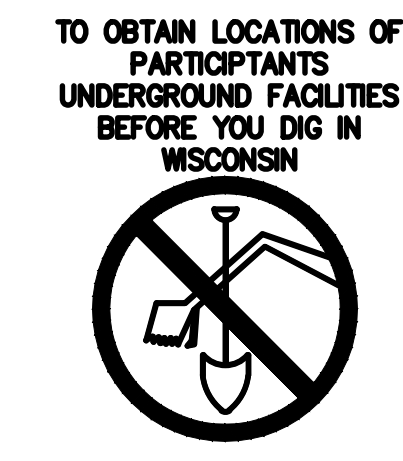
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 SITE PHOTOMETRICS
 PLAN

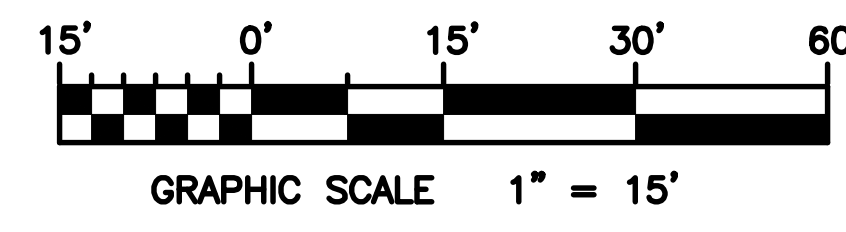
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Sheet No.
 E-201



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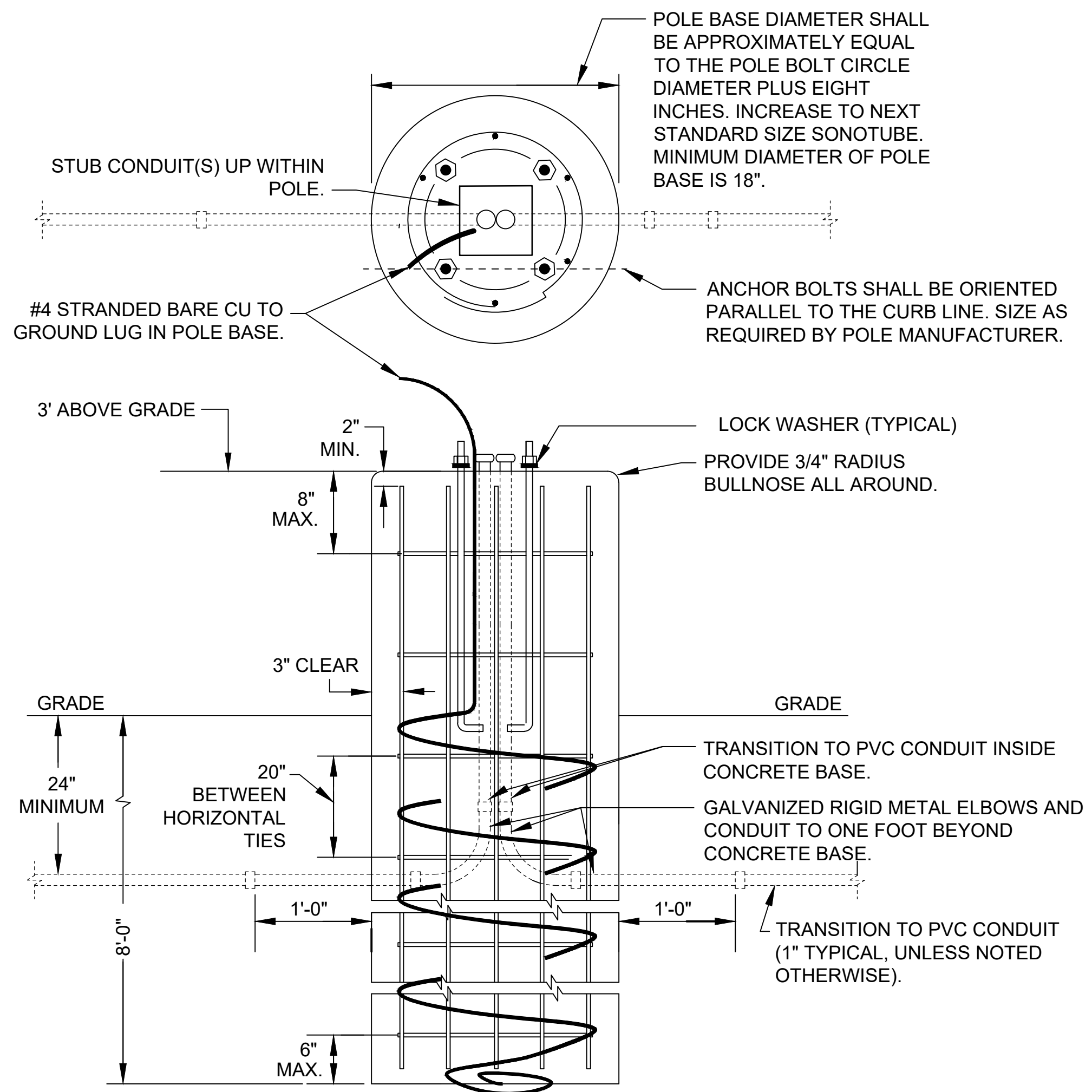
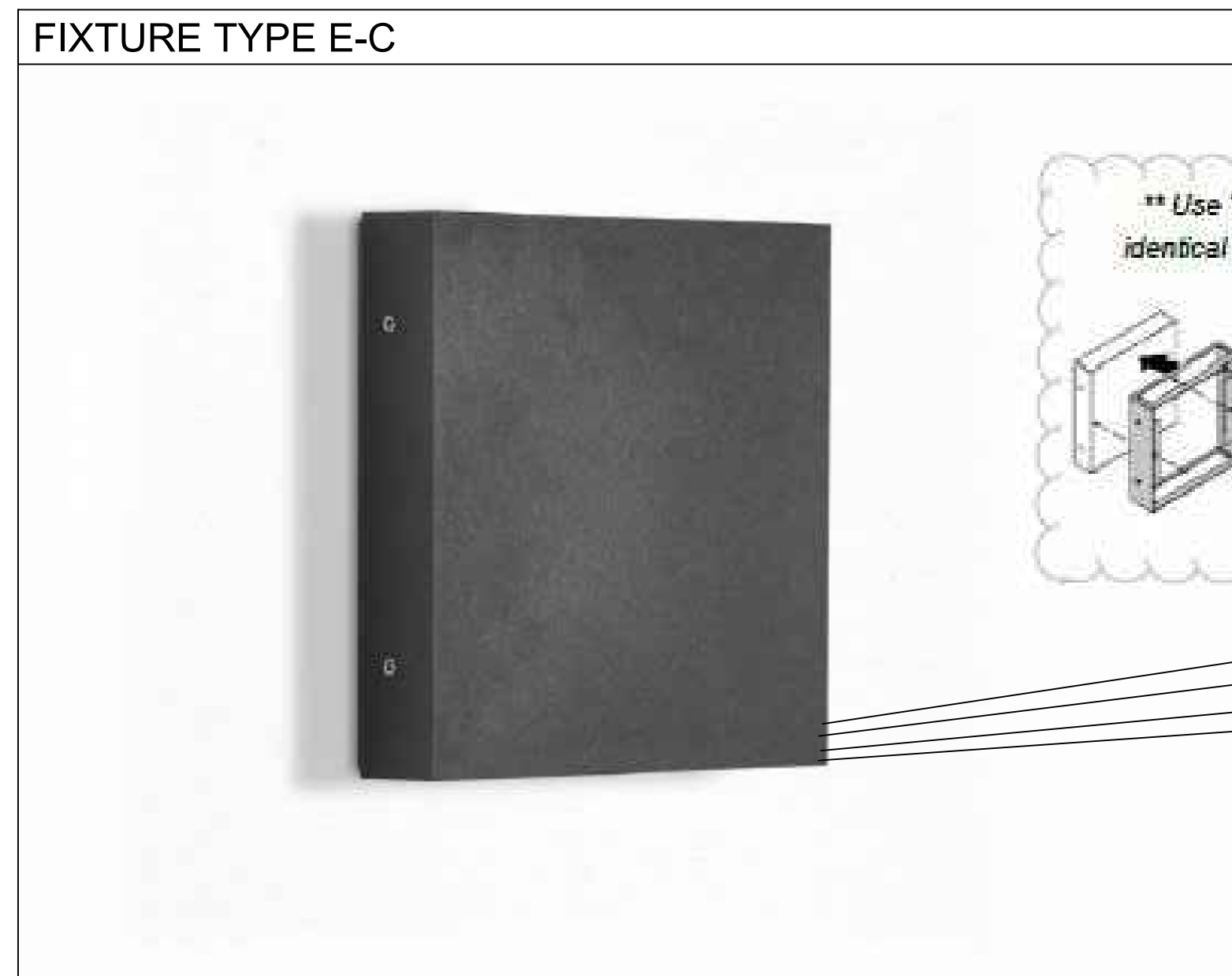
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EXTERIOR LIGHTING FIXTURE SCHEDULE

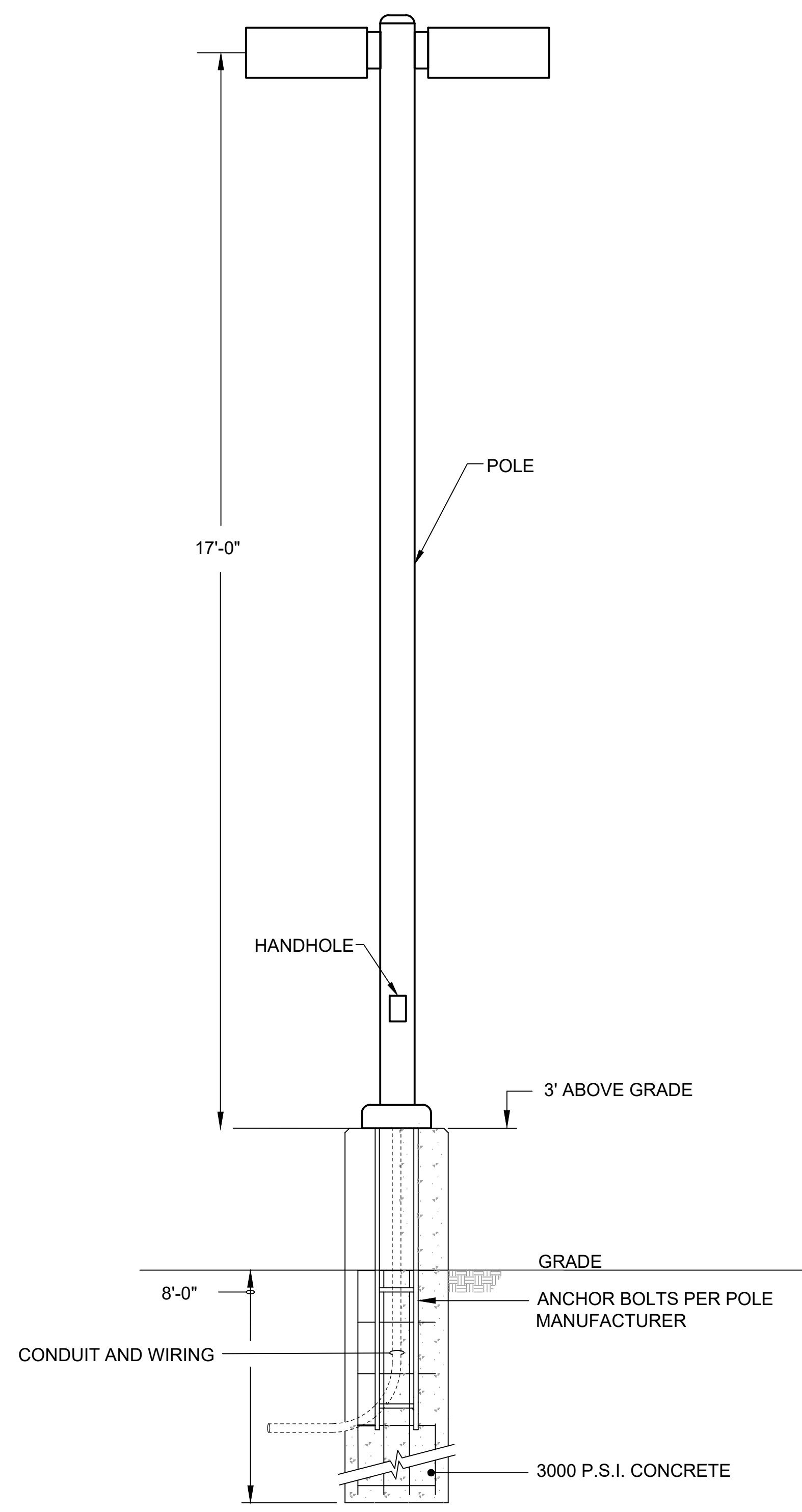
PLAN ID	DESCRIPTION	VOLTAGE	GENERAL FIXTURE CHARACTERISTICS			MOUNTING				LAMP INFORMATION			MANUFACTURER INFORMATION			NOTES
			FINISH	FEATURE	SPECIAL	TYPE	LOC	HEIGHT	BASE	#/FIX	TYPE	WATT	BASE MANUFACTURER	CATALOG NUMBER	ACCEPTABLE ALT. MFR.	
E-A	PUREFORM LED AREA WITH COMFORT OPTICS 26"	UNIVERSAL	BRONZE			POLE	CONC. BASE 3'	20'	18" Ø		LED	52 WATT	GARDCO BY SIGNIFY	P26 140L 1150 NW-G2 AR 3 UNV BZ		
E-B	PUREFORM LED AREA WITH COMFORT OPTICS 26"	UNIVERSAL	BRONZE			POLE	CONC. BASE 3'	20'	18" Ø		LED	75 WATT	GARDCO BY SIGNIFY	P26 140L 1675 NW-G2 AR 5 UNV BZ		
E-C	MIMIK 20 FLAT M WALL LED	UNIVERSAL	CUSTOM COLOR			WALL	COORD. W ARCH	VARIES	COORD. W ARCH		LED	13.5 WATT	PERFORMANCE IN LIGHTING	PIL 071178 MIMIK 20 14 120 28		
E-D	PUREFORM LED POST TOP WITH COMFORT OPTICS	UNIVERSAL	BRONZE			POLE	CONC. BASE	12' W	TBD		LED	22 WATT	GARDCO BY SIGNIFY	PPT 140L 450 NW-G2 T3 2 UNV BZ		



- CONCRETE AND HARDWARE NOTES:**
1. USE ANCHOR BOLTS FURNISHED BY POLE MANUFACTURER. VERIFY BOLT CIRCLE DIAMETER WITH MANUFACTURER.
 2. APPLY "ANTI-SEIZE" LUBRICANT TO ALL ANCHOR BOLT THREADS.
 3. USE #4 REBAR (TYPICAL).
 4. THE EXPOSED SIDES OF THE CONCRETE BASE SHALL HAVE THE FORMS REMOVED AND THE CONCRETE RUBBED OUT TO A SMOOTH FINISH.
 5. THE TOP OF THE CONCRETE BASE SHALL HAVE A BRUSH FINISH.
 6. PROVIDE 3/4" RADIUS BULLNOSE ON TOP EDGE OF CONCRETE.

- CONDUIT AND BOX NOTES:**
1. FOR ROUTING MULTIPLE CONDUITS TO/FROM A POLE CONDUITS SHALL BE STUBBED OUT THE TOP OF THE CONCRETE BASE WITHIN THE POLE DIAMETER.
 2. WHEN USED, JUNCTION BOX SHALL FACE OPPOSITE TRAFFIC AND SNOW PLOWING.
 3. PROVIDE A SPARE CONDUIT STUB AT EACH END-OF-LINE FIXTURE. SEE PLANS FOR ADDITIONAL SPARE STUBS.
 4. PROVIDE A BUSHING ON ALL EXPOSED CONDUIT ENDS.

- CONCRETE ENCASED (UFER) GROUNDING SYSTEM NOTES:**
1. PROVIDE ERICO EK16 DIRECT BURY CLAMP (OR EQUAL) AT TOP OF REBAR CAGE.
 2. PROVIDE 23' OF #4 BARE COPPER STRANDED GROUNDING ELECTRODE CONDUCTOR.
 3. EXTEND 3' OF CONDUCTOR OUT THE TOP OF POLE BASE FOR POLE GROUNDING.
 4. SPIRAL 10' MINIMUM OF CONDUCTOR AROUND OUTSIDE OF REBAR CAGE.
 5. LOOP REMAINING CONDUCTOR AROUND REBAR CAGE AT BOTTOM OF POLE BASE IN CONTACT WITH EARTH.



1 CONCRETE BASE DETAIL
SCALE: NONE

2 LIGHT POLE WITH BASE DETAIL
SCALE: NONE

Revisions

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LIGHTING FIXTURES,
LIGHTING SCHEDULE,
AND DETAILS

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